

# **The importance of shared understanding within football teams**

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This is an Accepted Manuscript of an article published by Taylor & Francis in Journal of Sport Psychology in Action on 13 May 2020, available online:

<http://www.tandfonline.com/10.1080/21520704.2020.1760982>

# 1    **The Importance of Shared Understanding within Football Teams**

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9    Word Count – 4,795

## Abstract

Within a football team, it is vital for coaches to acknowledge the importance of their players having the knowledge of what is required in specific roles in the team and what their other team members are likely to do in certain situations. This mutual knowledge can be defined as shared understanding – the ability for two or more people to have similar thoughts in specific situations based on their experience together. This paper considers what shared understanding is, its importance within team sports like football and the positive implications for teams who have players with accurate shared understanding. This paper provides practical suggestions for how coaches can develop shared understanding within their team.

Keywords: shared understanding; coordination; athlete-athlete dyads; sports psychology; football

## **The Differences between a Group and a Team**

Beauchamp, Maclachlan, and Lothian (2005) state that groups are complex entities with members who contribute various personal psychological traits. Brannick, Roach, and Salas (1993) and Carron and Hausenblas (1998) suggest that a team includes two or more individuals that work together to achieve a common goal (i.e., winning a football match). The terms group and team are used interchangeably and even though there are overlapping characteristics (Sheard & Kakabadse 2004), there are prominent variances demonstrates that they are very different (Fisher & Hunter 1997). The differences include teams requiring higher task orientation (Lencioni 2007) and more purpose (Humphrey, Morgeson, & Mannor, 2009) between their members compared to groups towards achieving the team's shared goals (i.e., players within a football team working towards winning a match), a greater requirement for structure (Stillman, Fletcher, & Carr 2007), interdependency between members of a team (Reimer, Park, & Hinsz, 2006) compared to a group (Varma-Nelson & Coppola, 2005) and the need for team members to possess a familiarity of each other's roles (Mumford, Van Iddekinge, Morgeson, & Campion, 2008) to coordinate their performance (Cannon-Bowers & Bowers, 2006). This suggests team members require knowledge of each other's role to be able to coordinate their actions.

**Cannon-Bowers and Bowers (2006) highlight the importance of team interdependence within football, that is centred on members in various sub-teams working together to coordinate their actions, whereas a member of a gymnastics team is unlikely to support another member during their performance. Sub-teams are required to perform their own roles that contribute to an effective team performance (Marsh, Richardson, Baron, & Schmidt 2006; Duarte et al., 2012). Lyle (2002) states that within performance coaching in team sport, the different requirements for each role require to**

1 **be developed through a thoroughly prepared training programme by the coach to help**  
2 **team members to understand their role and how this is crucial to the team's**  
3 **performance. For example, in football team members need to understand how what**  
4 **their role is within their own sub-team to facilitate an effective team performance (i.e.**  
5 **scoring goals or not conceding goals).**

6  
7 **A key consideration should be to examine how team members share the**  
8 **knowledge of each other's roles between each sub-team to coordinate their actions**  
9 **within team sport.** Therefore, it is crucial to investigate what shared understanding is, how it  
10 develops within a team, why it should be an important consideration for coaches in team  
11 sports and the impact this knowledge has on team performance.

### 12 13 **What is Shared Understanding?**

14 Shared understanding is when two or more people think **synergistically (i.e. share**  
15 **coordinated thoughts)** during specific scenarios based on prior experience performing  
16 together (Blickensderfer et al., 2010). Eccles and Tenenbaum (2004) state that for teams to be  
17 able to perform effectively together, their members require a knowledge of each other's skills  
18 and likely actions. This suggests that players must understand the abilities of their team  
19 members and use this knowledge to be able to read situations in the same way. Shared  
20 situational awareness can be defined as a relevant and accurate view of the environment and  
21 this provides a common picture between members of a team (Nofi, 2000). If team members  
22 did not have shared situational awareness, they would be unable to coordinate their actions  
23 (Adamu, Emmitt, & Soetanto, 2015) leading to an uncoordinated performance. **However, in**  
24 **addition to having the ability to read situations in the same way, it is also crucial to have**  
25 **a knowledge of why each player thinks this is the optimal action to understand each**

**other's in an effective performance (i.e. shared understanding).** When considering an attacking set piece for example, each team member would need to be able to analyse a situation in the same way, have an appreciation of each other's abilities as well as the likely actions of others in the team. If team members did not have a shared situational awareness, they would potentially make the same movements (rather than perform their own individual roles) and the set-piece would be unsuccessful. However, if player's shared understanding and their situational awareness was accurate, the chances of performing this set piece successfully would increase. Therefore, it is crucial for team members to interpret situations related to performance based on accurate information to be able to coordinate their performance. Silva, Garganta, Araújo, Davids, and Aguiar (2013) state that shared understanding can take time and experience performing together to develop effectively. However, it is important to consider how this knowledge is held and distributed within a team.

### **Shared Mental Models as a Foundation of Shared Understanding**

**Marks, Zaccaro, and Mathieu (2000) explain that a shared mental model is a set of knowledge structures that are shared between two or more people to enable a more effective performance (Converse, Cannon-Bowers, & Salas, 1993; Steiner, Macquet, & Seiler, 2017). Mathieu et al. (2000) state that the shared understanding is facilitated between multiple people (i.e. a football team) through an effective shared mental model. Within a football team for example, team members are required to think synergistically to work effectively together as a team.**

An effective shared mental model enables the sharing of information (shared understanding) and facilitates understanding between team members (Mathieu et al., 2000). Cannon-Bowers

et al. (1993) and Mathieu et al. (2000) discuss that there are multiple types of shared mental models rather than just one. **Cannon-Bowers and Salas (2001) states that shared knowledge is made up of four separate areas that include task-specific knowledge, task-related knowledge, knowledge of teammates and attitudes. This suggests that there are different types of knowledge that can be shared within the team. This is because different situations may require a combination of separate different knowledge structures between team members.** For example, if a team is required to focus on completing a task like scoring a goal in order to equalise late in a game, they would tap into one type of shared mental model (a task work mental model). Jonker, van Riemsdijk, and Vermeulen (2010) state that the task work shared mental model is linked to the team's task that must be carried out effectively. For example, a team would adopt this shared mental model when they were looking to score a goal in final stages of a match, rather than working effectively together and how the goal may be scored. However, a shared mental model which is more focused on how the team functions (a teamwork mental model) could be used by players that has new players in order to build their understanding. **This is because a teamwork mental model is focused on** how the team functions and considers each player's skills and preferred actions (Jonker et al., 2010). When new players start to play together, team members would use this type of shared mental model to learn how each other will react in certain scenarios, in order to perform together. However, Salas, Shuffler, Thayer, Bedwell, and Lazzara (2015) highlight the importance of both successful task work and teamwork in relation to an effective team performance, with both being co-dependent on each other. For example, teams who have high task expertise but do not work well together are unlikely to be able to perform effectively together.

1 A key consideration for success of performance in any situation is the efficiency of the shared  
2 mental model that team members access. For instance, if some team members do not have an  
3 accurate understanding of certain players and their roles, their teamwork mental model will  
4 not be effective, and the team will not know what each other are doing in certain scenarios.  
5 This can result in players choosing actions that may result in the loss of possession of the ball  
6 (i.e., one player may attempt to pass to the striker who is expecting a pass over the opposition  
7 defence). In this situation the striker would not retain the ball, increasing the chance of the  
8 opposition taking possession of the ball, reducing the chance of scoring a goal. Williamson  
9 and Cox (2014) state that it can take time to build an effective shared mental model between  
10 team members, in addition to experience performing together in order to develop. Ellis and  
11 Davidi (2005) highlight the importance of learning from mistakes in training to be able to  
12 develop better strategies for performing together, enhancing their shared mental model.  
13 Blickensderfer et al. (2010) and Gershgoren et al. (2016) suggest that experience performing  
14 together is fundamental to developing understanding between team members. Salas et al.  
15 (2015) elaborate on this **suggestion** that teams who have knowledge of how to perform the  
16 necessary task and can perform together are more likely to perform better. In reference to the  
17 above set piece example, for team members to be able to execute the corner effectively and  
18 increase their chance of scoring, they would need to work together to practice their individual  
19 roles in training.

## 21 **Why is Shared Understanding Important in Football?**

22 Eccles and Tenenbaum (2004), Silva et al. (2013) and Bourbousson et al. (2019)  
23 highlight the importance of shared understanding in relation to improving overall team  
24 performance. Cannon-Bowers, and Salas (2001) and Fiore, Salas, Cuevas, and Bowers (2003)  
25 state that accurate shared understanding between team members requires a knowledge of



1 other roles within a team (Reimer et al., 2006) and can influence the effective performance of  
2 the overall team. For example, if the defensive players have accurate knowledge of the  
3 attacking roles within their team, they would be able to use a mixture of their teamwork and  
4 task work shared mental model to more effectively transition possession of the ball to the  
5 attackers.

6  
7 However, this exchange of knowledge is only possible through an effective shared mental  
8 model that is developed over time performing together (Mathieu et al., 2000). For instance, if  
9 the whole team practice transitioning the ball forward during training sessions, defenders will  
10 know what type of pass is best to give certain attackers (i.e., a ball over the top of the  
11 opposition defence or to the attacker's feet). This knowledge will help the team keep  
12 possession of the ball, increasing the effectiveness of their performance and their chance of  
13 scoring goals. **In addition to developing an understanding of what team members are**  
14 **likely to do and what their preferences are, Salas, Sims and Burke (2005) state that**  
15 **within a successful team, members have specific knowledge of each other that allow**  
16 **players to modify the workload between team members (i.e. backup behaviours) if there**  
17 **are situations that require it.**

18  
19 The following section outlines the benefits of an effective shared mental model for team  
20 performance in football and shared understanding between players. In addition to stating the  
21 benefits of shared understanding between football players, the methods of how to develop  
22 shared understanding between team members will be detailed and analysed.

## 23 24 **Benefits of Increased Shared Understanding**

### 25 ***Improvements to the Methods of Communication between Players***

1           When team members perform more regularly together, their shared understanding will  
2 develop (Gershgoren et al., 2016) and their ability to use more effective methods of  
3 communication will improve. **Salas et al. (2005) further state that more effective methods**  
4 **of communication are formed through an efficient shared mental model and this can**  
5 **lead to improvements in performance (i.e. adaption to perform backup behaviours**  
6 **successfully if the situation requires it).** Cooke, Gorman, Duran, and Taylor (2007) suggest  
7 that when team members become more familiar with one another, their methods of  
8 communication become more streamlined and less-time consuming (i.e., they will be able to  
9 determine what certain shouts mean). For instance, when players get to know each other and  
10 have more accurate shared understanding, they may begin to use non-verbal methods of  
11 communication including looks and gestures (Onağ & Tepeci, 2014). **For example, when**  
12 **defensive line is performing an offside trap, effective communication methods will assist**  
13 **each player's focus and they are able to use specific shouts (verbal) or gesturing (non-**  
14 **verbal) to communicate that they should be doing.** Onağ and Tepeci (2014) state that in  
15 **this situation, the player's actions will be quicker and more efficiently compared to**  
16 **team members who are unable to communicate effectively together.** Eccles and  
17 **Tenenbaum (2004) and Cooke et al. (2007) suggest that to develop effective**  
18 **communication methods, team members must have an accurate understanding of each**  
19 **member, which is developed through experience performing together. This suggests that**  
20 **effective methods of communication can be established between team members through**  
21 **an accurate understanding between the players. Therefore, it would be important to**  
22 **consider how shared understanding is able to improve within team sport.**

## **How to Improve Shared Understanding between Team Members**

Blickensderfer et al. (2010) state that there are several factors that can facilitate the development of shared understanding between team members. This section will establish the benefits of shared understanding between football players and suggest three methods that coaches can implement as part of their training schedule to improve overall team performance. Salas, Nichols, and Driskell (2007) highlight the importance of methods of team training and how different experiences with team members can improve their knowledge of one and other.

### ***Give Players Guided Experience Performing Together***

A method for developing shared understanding between football players involves players having more experience performing together (Blickensderfer et al., 2010). Salas, DiazGranados, Weaver and King (2008) suggest that team training gives members the opportunity to practice game related scenarios and develop their skills together however, this must be guided by the team's coach (i.e. training focused on a different formation for the next match) as unguided experience does not guarantee learning (Salas et al., 2008). Salas et al. (2007) advocate that if someone (i.e. a coach) guides the experience this can lead to the development of an effective shared mental model between athletes and an efficient team performance. Deakin and Copley (2003) suggest that coaches can give team members the opportunity to develop an opponent specific shared mental model based on the team that they are against. **Team members must adapt to the actions of their opposition as well as their own team (Tenenbaum, 2003). For example, a team close to the relegation zone would adopt a different shared mental model against a team near the top of the league (more defensive) compared to a team below them (more attacking). Therefore, the team's coach can create scenarios within training prior to this match to prepare their team to**

1 perform effectively against the opposition by making it more difficult for them to  
2 predict how they are going to perform.

3  
4 The above example demonstrate that a different shared mental model may be required  
5 in different situations depending on external circumstances like their opposition  
6 (Reimer et al., 2006) but this must be implemented by the coach. This approach from a  
7 coach can prepare their players for several different situations, this can reduce the  
8 likelihood of the opposition being able to predict how the team is going to play as they  
9 do not have one style of play for every match. Salas et al. (2005) further state that a  
10 crucial effective understanding between players, through specific training, can develop  
11 a knowledge of how to perform backup behaviours if required. For example, if a  
12 defender is caught out of position, a successful team with an effective shared mental  
13 model would allow for another player to cover for this defender and perform their role  
14 until they are back in position. This situation can be achieved during specific training,  
15 to be implement during a game.

16 However, Deakin and Copley (2003) and Gabbett (2006) highlight that a coach has a crucial  
17 role within players gaining specific experience together and improving the learning  
18 experience training to prepare for competition. Williamson and Cox (2014) illustrate the  
19 importance of experience together and state that accurate expectations of others are possible  
20 through team members performing with each other. In this situation, players will further their  
21 knowledge of their own role, understand other team member's required actions and perform  
22 better together. Salas et al. (2008) recommend that relevant and detailed feedback is a  
23 crucial part of team training and can reinforce desired behaviours for each player. Ellis  
24 and Davidi (2005) state that specific and organised feedback on their performance can be  
25 beneficial for team members. For example, feedback in the form of debriefs from a coach on

1 theoretical situations could also be used during training sessions to reinforce off-field training  
2 methods. Salas et al. (2015) highlight the importance of coaches using debriefs within  
3 training to give athletes opportunity to reflect on positive and negative aspects of  
4 performance. **This experience can assist reinforcement of learning help to improve their**  
5 **decision making for future performances.** Tannenbaum and Cerasoli (2013) advocate that  
6 if coaches use debriefs effectively, the team's performance can improve in the future by up to  
7 25%. This method gives players experience performing together, with the a debrief from the  
8 coach they are more knowledgeable of what to do in certain situations within their team.

10 As stated within The Model of Team Cohesion for Sports (Carron & Brawley 2008) task  
11 cohesion is a crucial component in relation to team cohesion. Task cohesion can be  
12 developed through participants performing together and gaining experience with each other  
13 in a practical environment (Carron & Brawley 2008), further developing their knowledge of  
14 each other and improve their ability to perform more effectively together (Williamson & Cox,  
15 2014). Salas et al. (2007) advise that through team training, team members can get experience  
16 together and develop solutions to errors in performance. Blickensderfer et al. (2010)  
17 recommend that team members within tennis doubles, choose their actions based on their  
18 previous experience in similar situations with their team. Previous experience together is also  
19 crucial for developing accurate decision making within team sports. For example, a coach  
20 should select their squad and allow the sub-teams (i.e. two strikers) to learn how each other  
21 perform in certain situations, as proposed by Williamson and Cox (2014) with the added  
22 pressure of competition. This is an effective method for players to see how each other react in  
23 various situations and create an accurate understanding of the actions of others and as  
24 Gershgoren et al. (2016) suggest, this can lead to a better team performance.

## ***Experience Together Outside of Football***

In addition to experience in a football setting, coaches should encourage players to spend time together outside of a sporting context. Carron and Brawley (2008) state that social cohesion is a central component when examining team cohesion and can facilitate the development of shared understanding between players in the team. This will help develop their understanding within a sporting setting because team members who do not get along with one another are less likely to perform effectively together (O'Neill, Allen, & Hastings, 2013). Pescosolido and Saavedra (2012) reveal that team members that spend some of their spare time together can improve the effectiveness of their relationship and their ability to work efficiently as a team. Examples of different team building activities could include crazy golf, playing video games or going out for a meal with the focus being on improving their relationship. **This approach can also support team members to understand and outline the various roles within a team (Shuffler, Burke, Kramer & Salas, 2013). However, Salas (2015) suggest that this method may not always have benefit for team members.**

Salas et al. (2008) highlight that teams can benefit from taking part in team building activities together as this can develop interpersonal relationships and improve social interactions between team members **however, team training strategies can be more effective.**

Therefore, it would be beneficial for team performance if coaches to encourage players to spend time together in their own time. However, as illustrated within The Model of Team Cohesion for Sports (Carron & Brawley 2008), both social and task cohesion are required for a team to be able to effectively perform together.

## *A Combination of Both*

As suggested in the previous two sections, both experience performing together and spending time together outside of the sport are an important way of developing shared understanding between team members. Salas et al. (2008) suggest that effective training does not just happen overnight and can take time to develop. Carron, and Brawley's Model of Team Cohesion for Sports (2008) state that a mix of both task and social cohesion (in a sporting environment and a social setting), would be beneficial to a team's ability to work effectively together. Therefore, experience in football and outside of the sport is an important recommendation to coaches who have the desire to improve their team's shared understanding.

## *Greater Knowledge of Other Roles in a Team*

Cannon-Bowers and Bowers (2006) reveal that if team members understand other player's roles in the team, this can improve the chances of being able to work together effectively together. Salas et al. (2015) state that cross-training is a method of team training that involves coaches rotating players around different positions, leading to improvements in team performance and a greater understanding of other roles. This is because this scenario will give players an appreciation of what others will do in certain roles in the team (Marks et al., 2002), can allow team members to perform **backup behaviours if required** (Salas et al., 2005) and facilitate a more effective team performance. Cruickshank and Collins (2012) suggest that teams are made up of several different sub-teams based on team member's positions. For example, if the central midfielders in a football team have the knowledge that their central defenders are likely to win headers **against a certain team** when they challenge for the ball in the air, they can access their team work mental model and move into a position on the pitch where they think the ball is most likely to land. **However, if the defenders are**

1 **playing against attackers who are likely to stop the defender winning a header, they will**  
2 **be able to coordinate their behaviour to respond to this situation.** Through an increase in  
3 understanding of each other's roles, players can accurately predict what other players will do  
4 next (Jonker et al., 2010) **and can perform backup behaviours if they need to (Salas et al.**  
5 **2005).** For example, if the central midfielders had knowledge of what their central defenders  
6 are likely to do through an effective teamwork mental model, then they are more likely to be  
7 able to predict what they are likely to do. This allows players to get into a position where they  
8 think that the football will land in order to perform their own chosen action. However,  
9 experience performing together is crucial to build the knowledge between team members  
10 (Eccles & Tenenbaum, 2004).

#### 12 *Discuss Hypothetical Scenarios as Part of Training*

13 Another suggestion for improving shared understanding between players is to discuss  
14 hypothetical football-based situations with players. This gives players another form of  
15 experience and can learn what each other are thinking in certain situations **and helps to**  
16 **prepare for different situations that may be required when performing against different**  
17 **teams, leading to that team's actions being less predictable by an opposition. For**  
18 **example, if a team has prepared multiple strategies through team training led by their**  
19 **coach, they will be able to effectively use their knowledge of different strategies through**  
20 **their shared understanding against an opposition.** As recommended by Silva et al. (2013),  
21 experience together is a crucial factor in developing shared understanding between team  
22 members. Therefore, if there was another method that could give players extra experience,  
23 team members would be able to develop shared understanding over a shorter period, allowing  
24 team members to perform more effectively together quicker. Salas et al. (2008) suggest that



1 effective team training must include conveying knowledge in a classroom setting in addition  
2 to practical scenarios.

3  
4 Silva et al. (2013) conjecture thinking the same in specific situations can lead to a more effective  
5 team performance. For example, through using a tactics board a coach can design specific  
6 scenarios and ask their players to write down what their thoughts are and what actions they  
7 think some of the players should take. This can lead to an open discussion with team  
8 members to see what each player thinks and see if they possess parallel thoughts.

9 Implementing this type of training can alleviate any issues around injured players potentially  
10 missing out on experience performing together for example. Taking part in hypothetical  
11 scenarios will mean that players can still develop their understanding of one and other  
12 without making their injury worse.

13 Marks, Zaccaro, and Mathieu (2000) reveal that team members possess a shared mental  
14 model where they share their thoughts based on previous experience performing together.  
15 This is an effective way of opening a dialog with players and allows everyone to see what the  
16 rest of their team thinks in certain situations. This type of activity can improve the team's  
17 shared understanding and give them an appreciation of what is required in certain roles.

18 Reimer et al. (2006) and Salas et al. (2015) evidence that to perform effectively together,  
19 team members require an understanding of players who perform different roles and how they  
20 are likely to react in certain situations.

### 21 22 *Encourage an Open Discussion between Coaches and Players*

23 Mathieu et al. (2000) highlight the importance of having knowledge of other roles in a  
24 team and having efficient shared understanding between their members to perform effectively  
25 together. **This can lead to developments in communication between team members,**

1 **through and effective shared mental model, and can facilitate improvements to**  
2 **performance like improved coordination and improved ability to perform backup**  
3 **behaviours Salas et al. (2005).** This approach does not have to be based on tactics boards  
4 and can involve different methods such as a focus group with players to talk about situations  
5 or watch videos of a series of play then have a discussion with each other. Blickensderfer et  
6 al. (2010) advocate this is fundamental to the development of shared understanding between  
7 players as the knowledge of how their team members think and act in specific situations.

### 8 9 *Give Players the Knowledge to Allow for the Prediction of Actions*

10 Through open discussions with players (**i.e. theoretical scenarios off-field or during**  
11 **situation-based training**) team member's understanding of each other and their own roles  
12 within the team will increase. Mach, Dolan, and Tzafrir (2010) suggest that understanding  
13 other roles within a team can allow for a more effective team performance. This is an  
14 important consideration for coaches as this approach can lead to players more accurately  
15 being able to predict what each other are going to **do and prefer to do** at any one time.  
16 Mathieu et al. (2000) state that team members are more successful at predicting the actions of  
17 their team members if they have the knowledge of each other's abilities and are more likely  
18 to produce a more coordinated performance. For instance, using these types of scenarios  
19 **before or during training sessions, while** holding open discussions will give players the  
20 understanding of what each other are thinking and translate that to real world situations. **This**  
21 **can allow team members to be able to perform backup behaviours (Salas et al., 2005) if**  
22 **players are out of position. In addition to this, team members will learn what other**  
23 **players prefer to do during a match (i.e. having the ball to be passed to their feet to**  
24 **move the ball on quickly or the ball played into an open space to run onto to then score**  
25 **a goal).** To conclude, this training approach will give team members the knowledge of what

each other may prefer to do in specific situations – based on player discussions – and can improve their accuracy of predicting these actions and lead to a more effective performance.

#### **Conclusion**

In a team sport like football it is important to acknowledge the link between shared understanding between team members and an effective team performance (Gershgoren et al., 2016). Teams who have experience performing together will be able to more accurately predict what each other will do in certain situations (Mathieu et al., 2000) and be able to produce a more efficient team performance including **increased coordination and the capability of performing backup actions if required (Salas et al., 2005)**. One of the fundamental parts to this is team members who understand each other's role and likely actions (Silva et al., 2013). Coaches who facilitate shared understanding between their players can improve methods of communication between team members at the same time as improving their ability to perform effectively together. However, coaches must be able to give their players experience of performing together to be able to build up an accurate understanding. That can range from pairing players up in training to discussing hypothetical scenarios with their team in order to improve their understanding of specific roles within the team and potential required actions. Adopting these methods as part of a training schedule will benefit players within a team by developing shared understanding between players to help produce a more effective team performance over a shorter period.

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